

Introduction

Features and Functions

The iLux® units, CLS-C6 and CLS-C6M, are complete integrated wall-mounted lighting systems that can function as standalone devices or be part of a total Crestron® solution. The units are functionally identical except that the CLS-C6M includes a built-in motion sensor.

CLS-C6M with Cover Open (Shown in Almond)



Specifications

Following are specifications for the iLux units.

CLS-C6 & CLS-C6M Specifications

SPECIFICATION	DETAILS
Power Requirements	Line Power, 120 Vac, 60 Hz
Load Ratings ¹	
Max load per channel	800 W/VA (6.6 Amps @ 120 Vac), expandable via CLS-EXP expansion modules (sold separately)
Min load per channel	15 W/VA (0.125 Amps @ 120 Vac)
Max load per unit	1920 W/VA (16 Amps @ 120 Vac)
Load Types	LED ² , Incandescent, Magnetic Low-voltage, Neon/Cold Cathode, 2-Wire Dimmable Fluorescent, \varnothing Non-Dim Lighting; Electronic Low-voltage, 3 and 4-Wire Fluorescent, High-Inrush Switching, and 277 V via CLS-EXP Series expansion modules ³
Cresnet Power Available for Local Devices	10 W Maximum External power supplies sold separately
IR Receiver	
Reception Frequency	36 kHz, For use with Crestron IR remote CLS-IRHT8 ³

(Continued on following page)



CLS-C6 & CLS-C6M Specifications (Continued)

SPECIFICATION	DETAILS
Motion Detector (CLS-C6M only) Type Range	Infrared 20 to 30 feet at 4-foot elevation (6 to 9 meters at 1.2 meter elevation)
Default Net ID	1F
Environmental Temperature Humidity	32° to 104° F (0° to 40° C) 10% to 90% RH (non-condensing)
Enclosure	Mounts in a 4-gang electrical box, 3 1/2" (89 mm) deep minimum
Overall Dimensions: Height Width Depth	4.48 in (114 mm) 8.89 in (226 mm) 2.47 in (63 mm) for CLS-C6 2.60 in (66 mm) for CLS-C6M
Weight	23 oz (649 g)

1. If the unit is fed from an arc fault circuit interrupter, the maximum total load is 1000 W/VA to avoid nuisance tripping.

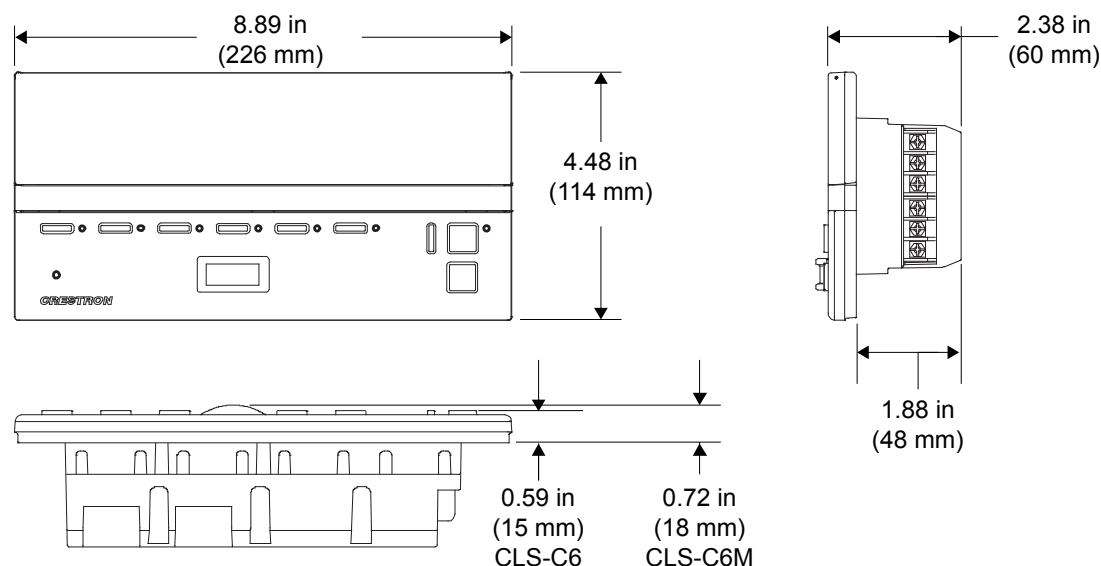
2. For a list of compatible ballasts, visit www.crestron.com/lightingcompatibility.

3. Sold separately.

Physical Description

The following illustration shows the overall dimensions for the CLS-C6 and CLS-C6M.

CLS-C6M Overall Dimensions



Installation

Important Notes (Read Before Installation)

- **Codes:** Install in accordance with all local and national electrical codes.
- **Wiring:** Use copper wire only. For supply connections, use wires rated for at least 75° C.
- **Lighting Load Types:** LED, incandescent, magnetic low-voltage, neon/cold cathode, 2-wire dimmable fluorescent, and non-dim lighting.
Electronic low-voltage, 3 and 4-wire fluorescent, high-inrush switching, and 277 V via CLS-EXP Series expansion modules (sold separately)
- **Temperature:** The iLux units are designed for use where temperatures are between 32° to 104° F (0° to 40° C).
- **Electrical Boxes:** The iLux units mount in standard 4-gang electrical boxes, 3.5 inches (89 mm) deep, minimum.
- **Make certain that power is turned off,** and ensure that there is at least 4 1/2 inches (115 mm) of open space above and below the electrical box location to permit adequate heat dissipation.

WARNING: Turn off power at the distribution panel circuit breaker. Installing with power on can result in serious personal injury and damage to the device.

CAUTION: To reduce the risk of overheating and possible damage to other equipment, do not use to control a receptacle or a motor-operated appliance.

NOTE: The CLS-C6 units require a neutral wire connection for operation.

The following tools and hardware are required for installation.

- A 4-gang electrical box (not supplied), 3.5 inches (89 mm) deep, minimum.
- Phillips torque screwdriver (not supplied)
- Four 7/8 inch (~22 mm) pan head Phillips screws (supplied)

If the planned configuration includes connection to shade controllers, keypads or a Crestron 2-Series control system, the following items are also required:

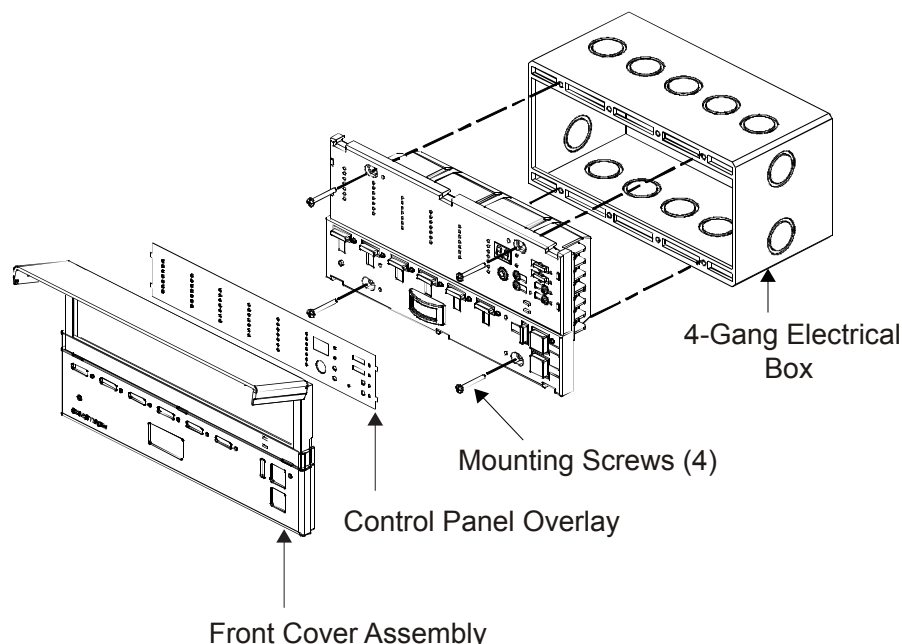
- Cresnet® network cable(s) (not supplied)
- Terminal block connector(s) (two supplied)

For detailed configuration options, refer to the latest version of the Crestron CLS-C6 & CLS-C6M iLux Lighting System Operations Guide (Doc. 6347), which is available from the Crestron Web site (www.crestron.com/manuals).

Check that any required Cresnet wiring has been installed and verified. Then, use the following procedure to install the iLux unit (CLS-C6M is shown in the illustrations).

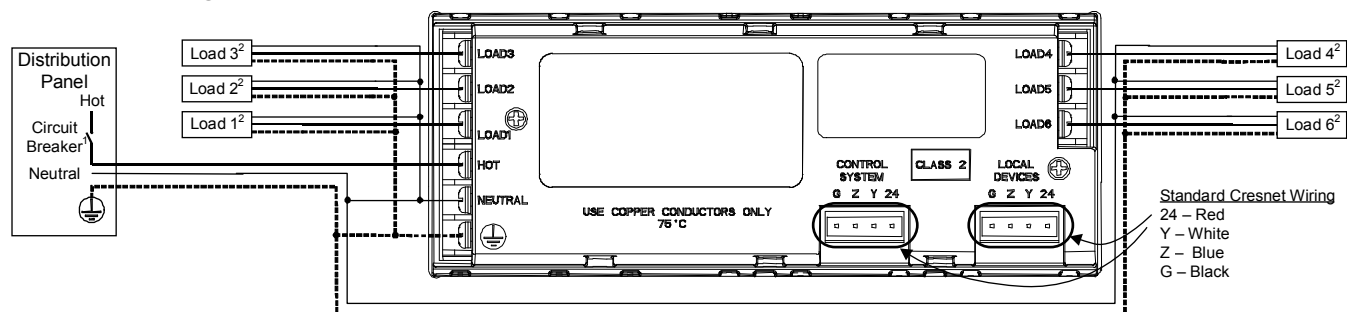
1. Feed the wires (power line from the distribution panel, load wires, plus any required Cresnet cables) through the holes in the electrical box.
2. Hold the rear of the CLS-C6M unit and remove the front panel and cover assembly by carefully pulling out and up from the bottom edge.

CLS-C6M Installation



3. Remove the control panel overlay from the unit (it is held in place by small tabs and lifts off) to reveal the upper mounting screw holes.
4. Refer to the diagram below for connection of the ac wiring. All wires to be inserted in the screw terminals should be stripped 7/16 inch (~11 mm), and screws should be tightened to between 8 and 10 in.-lbs. (0.90 to 1.13 Newton meters). The maximum wire size is 12 AWG (3 mm²).
5. Connect each load wire to the corresponding **LOAD** terminals on the unit, connect the power line hot wire from the circuit breaker to the **HOT** terminal on the unit, connect all neutral wires to the **NEUTRAL** terminal on the unit, and connect all ground wires to the \oplus (ground) terminal on the unit.
6. If Cresnet cabling is part of the installation, attach the supplied terminal block connector(s) to the Cresnet cable(s) and plug into the appropriate port(s) on the unit. Make certain that there is a minimum 1/4 inch (~6 mm) separation between the Class 2 Cresnet wiring and the Class 1 ac wiring.
7. Carefully tuck all wires into the electrical box and fasten the unit to the electrical box using the four 7/8-inch (~22 mm) Phillips screws supplied.
8. Reattach the control panel overlay to the front panel by inserting the four tabs into the slots on the unit, and install the hinged front cover assembly by lining it up at the top and pressing the bottom edge until it snaps into position.

CLS-C6M AC Wiring

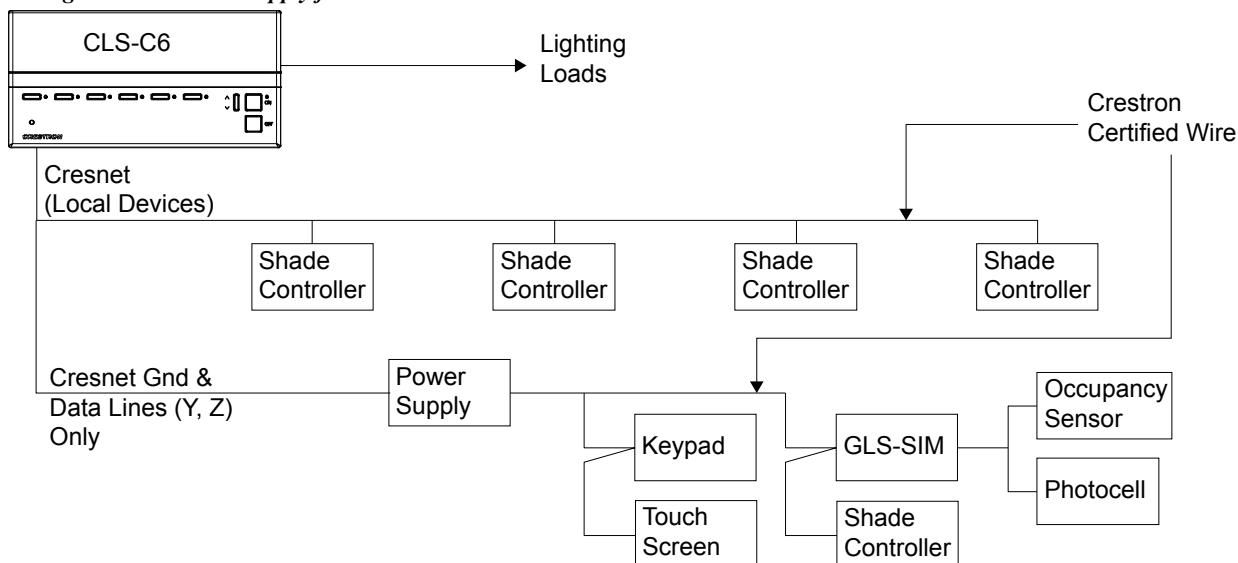


1. Use a 15 or 20 A circuit breaker depending on installation requirements. Refer to specifications for load rating details.
2. CLS-EXP expansion modules can be used in place of any or all loads shown above. Refer to expansion module documentation for wiring details.

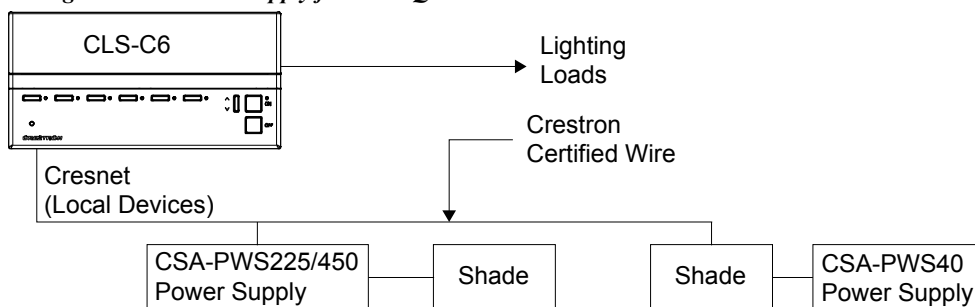
Adding External Power Supplies

Additional power supplies are required to support more than four keypads or shade controllers on the **LOCAL DEVICES** network. Also, each C2N-SDC-DC, CSM-QMT50-DCCN and CSC-DCCN shade controller requires its own additional power supply. The diagram below illustrates a scenario where an external power supply is required to add a shade controller and other devices to a network that already contains four shade controllers. The actual number of external power supplies required depends on the system configuration. The illustrations on the following pages show a variety of installation configurations.

Adding External Power Supply for C2N-SDC-DC Controlled Shades



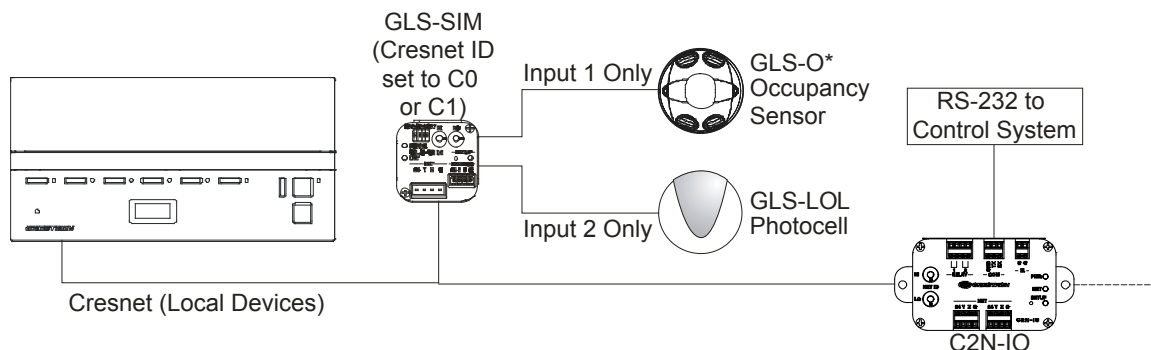
Adding External Power Supply for CSM-QMT50-DCCN and CSC-DCCN Controlled Shades



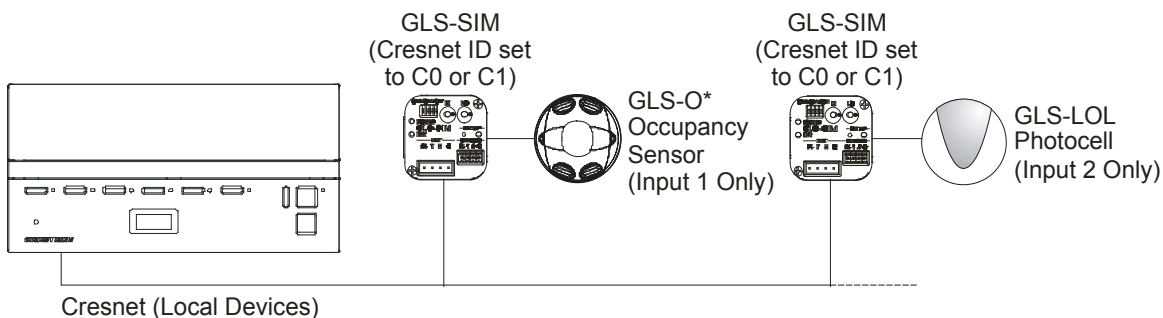
Wiring Occupancy Sensors and Photocells

NOTE: Ensure that all CLS-C6 and CLS-C6M devices contain the latest firmware to take advantage of the most recently released features.

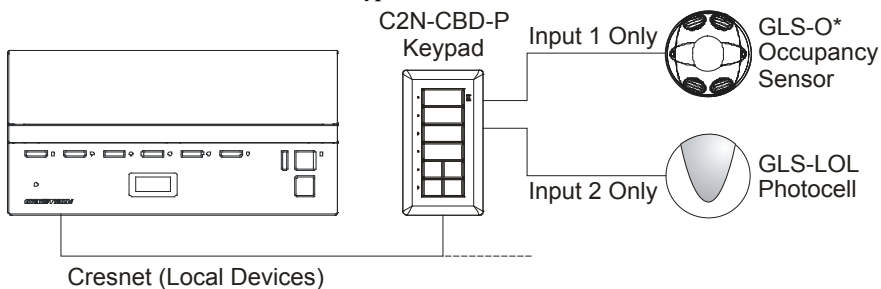
CLS-C6M with One GLS-SIM and C2N-IO



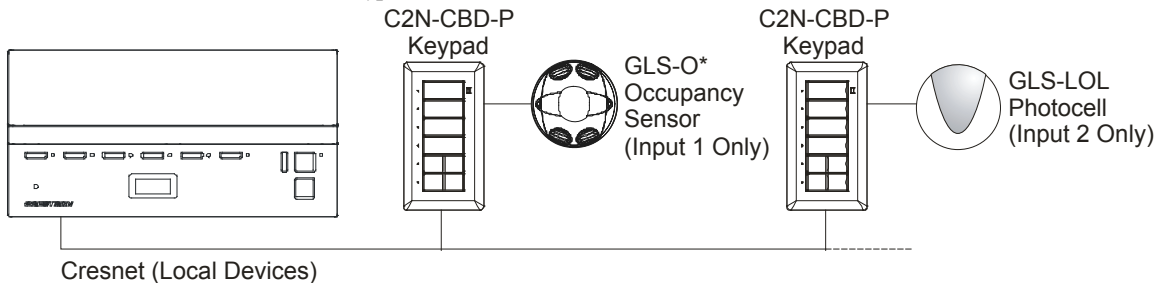
CLS-C6M with Two GLS-SIM Units



CLS-C6M with One C2N-CBD-P Keypad



CLS-C6M with Two C2N-CBD-P Keypads



* Refer to the latest version of the Crestron CLS/CLSI-C6 & CLS/CLSI-C6M iLux Light System Operations Guide (Doc. 6347) for details on supported devices.

Setup

Network Wiring

When wiring the network, consider the following:

- Use Crestron Certified Wire.
- Use Crestron power supplies for Crestron equipment.
- Provide sufficient power to the system.

CAUTION: Insufficient power can lead to unpredictable results or damage to the equipment. Please use the Crestron Power Calculator to help calculate how much power is needed for the system (<http://www.crestron.com/calculators>).

For networks with 20 or more devices, use a Cresnet Hub/Repeater (CNXHUB) to maintain signal quality.

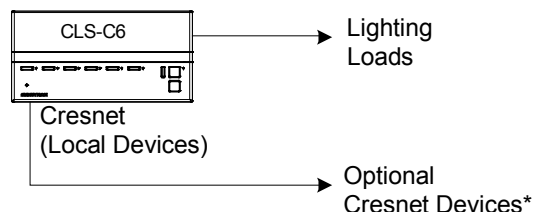
For more details, refer to “Check Network Wiring” on page 11.

Installation Configurations

The following figures illustrate five installation configurations and include brief descriptions of the rationale behind each one.

NOTE: The power usage requirements on the local devices network is different from that described above. The CLS-C6 provides 24 Vdc power for up to four keypads and/or shade controllers on the local device network. An additional power supply is required to support more than four devices. Also, each shade controller requires its own additional power supply.

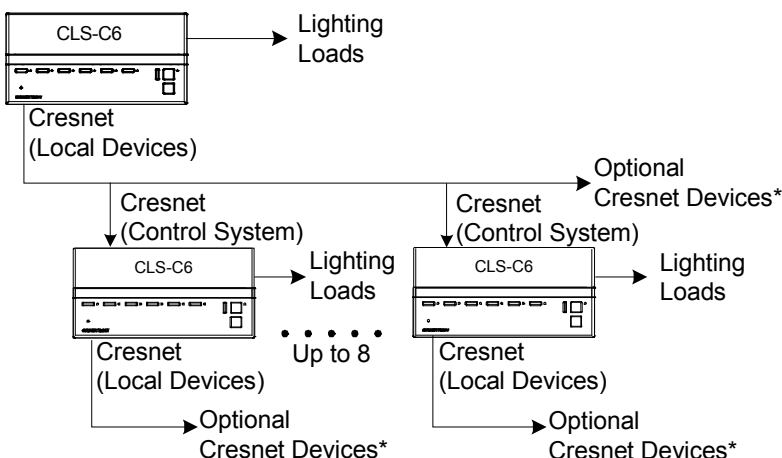
CLS-C6 Installation Configurations



Method 1: Standalone CLS; Most common way.

Why? Simplest way to control up to six lighting loads and six shade control groups.

No control system required.



Method 2: Primary CLS with multiple secondary CLS units.

Why? Large room with more than six lighting loads or shade groups.

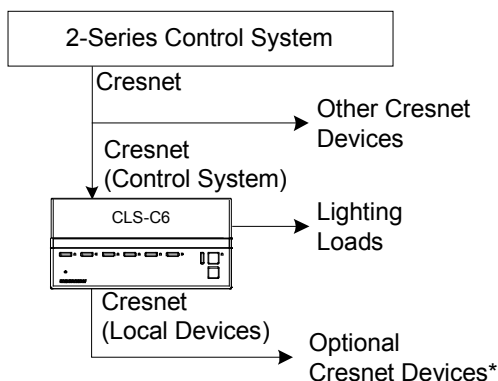
No control system required.

Scene recall and master dimmers affect entire room. Can still adjust each circuit individually. For details on room combining, refer to Appendix E in the Crestron CLS/CLSI-C6 & CLS/CLSI-C6M iLux Lighting System Operations Guide (Doc. 6347).

(Continued on following page)

* Refer to the latest version of the Crestron CLS/CLSI-C6 & CLS/CLSI-C6M iLux Light System Operations Guide (Doc. 6347) for details on supported devices.

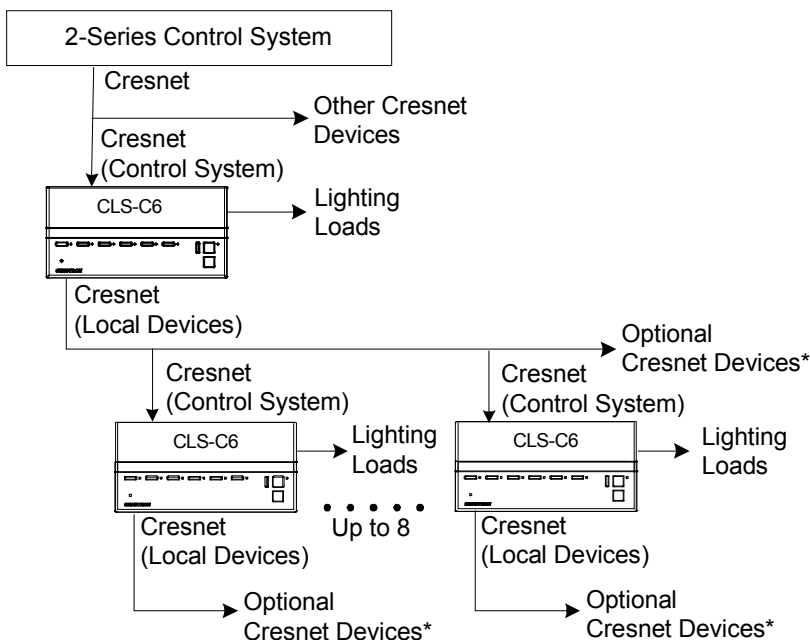
CLS-C6 Installation Configurations (Continued)



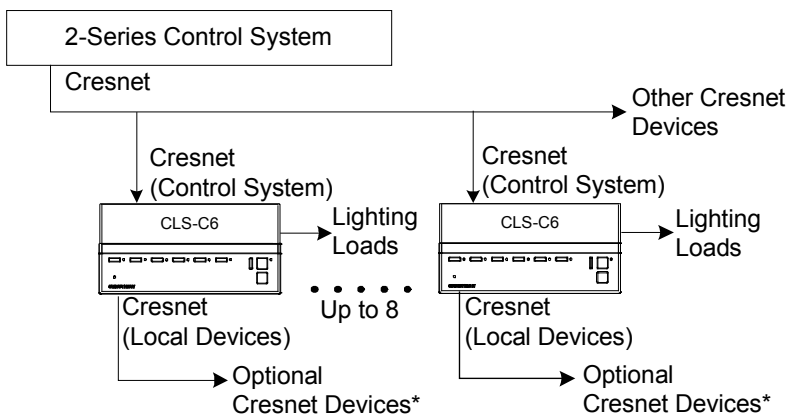
Method 3: Same as (1) plus a 2-Series control system communicating with the CLS.

Why? Control system can control and monitor operation of the lighting system. Can trigger lighting scenes from touch screens, RF wireless remotes, computers, or real-time clock. Buttons on lighting system can control other functions.

Lighting system still operates on its own if the control system is not running.



Method 4: Variation of (3), but for a large room.



Method 5: 2-Series control system with multiple CLS units on main Cresnet network.

Why? Monitor and control lighting in multiple independent rooms. Combine rooms in any arrangement under program control.

Includes all features of other configurations. Each individual CLS system can operate without a control system.

* Refer to the latest version of the Crestron CLS/CLSI-C6 & CLS/CLSI-C6M iLux Light System Operations Guide (Doc. 6347) for details on supported devices.

Supported Devices

The following table lists devices supported by the iLux units and their power requirements.

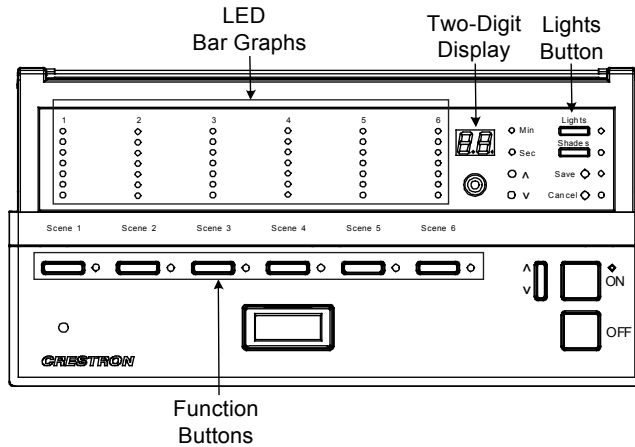
Supported Devices Power Requirements

NAME	DESCRIPTION	CRESNET POWER FACTOR (W)		MAX QTY
C2N-DB6	6-Button Keypad	3 watts		16
C2N-DB8	8-Button Keypad	3 watts		16
C2N-DB12	12-Button Keypad	3 watts		16
C2N-CBD/CBF (All Models)	Cameo® Keypad	0.5 watts		16
C2NI-CB/ INETI-CB	Cameo Keypad (International)	0.5 watts		16
C2N-IO	Control Port Expansion Module	1 watt		1
C2N-SDC	Shade and Drape Controller	3 watts		16
C2N-SDC-DC	Shade and Drape Controller, 24V DC	Up to 32 watts		16
C2N-SSC-2	Somfy Shade Controller	1 watt		16
CNX-B2	2-Button Keypad	3 watts		16
CNX-B4	4-Button Keypad	3 watts		16
CNX-B6	6-Button Keypad	3 watts		16
CNX-B8	8-Button Keypad	3 watts		16
CNX-B12	12-Button Keypad	3 watts		16
CSC-ACCN	Shade Interface	N/A		16
CSC-DCCN	Shade Interface	N/A		16
CSC-DRPCN	Draper Track Interface	N/A		16
CSM-QMT50-DCCN	Crestron Shade Motor	N/A		16
GLS-SIM	Sensor Integration Module	1 watt plus attached sensor wattage	Partitions	36
			Occupancy sensing	2
			BMS integration	4
GLS-ODT & GLS-OIR Series	Occupancy Sensors	1 watt		2
TPS-4L	3.6 in Wall-Mount Touch Screen	5 watts		2
TPS-6L	5.7 in Wall-Mount Touch Screen	15 watts		2

Testing

The following illustration shows the front panel of the unit and the controls used during installation.

Front Panel Controls and Indicators



Verify the basic installation and wiring connections as follows:

1. Press the **Lights** button to enable manual light control, and press the right side and the left side of each of the function buttons to increase and decrease the lighting level of those loads. Verify that the intended loads and corresponding LED bar graphs respond appropriately.
2. Press the **OFF** button to turn off all loads. The loads ramp down to off while the two-digit display counts down to off (blank). Two seconds after all lights have turned off, the unit's master air-gap relay opens making it safe to service the lighting installations.

Troubleshooting

The following table provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron customer service representative.

CLS-C6/C6M Installation Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Unit does not function.	Unit is not receiving line power.	Verify that the unit is properly connected to the power line and that the circuit breaker is closed.
	Loads are not connected.	Verify that the loads are operational and that they are connected to the iLux unit.
Loads turn on and off, but do not dim.	Wrong load type settings.	Correct load type settings. *
Lights flicker at low levels	Incorrect low-end limit setting.	Change low-end limit setting. *

* Refer to the latest version of the Crestron CLS-C6 & CLS-C6M iLux Lighting System Operations Guide (Doc. 6347) for details on setting load types and low-end limits.

Check Network Wiring

Use the Right Wire

To ensure optimum performance over the full range of the installation topology, use Crestron Certified Wire only. Failure to do so may incur additional charges if support is required to identify performance deficiencies because of using improper wire.

Calculate Power

CAUTION: Use only Crestron power supplies for Crestron equipment. Failure to do so could cause equipment damage or void the Crestron warranty.

CAUTION: Provide sufficient power to the system. Insufficient power can lead to unpredictable results or damage to the equipment. Use the Crestron Power Calculator to help calculate how much power is needed for the system (www.crestron.com/calculators).

When calculating the length of wire for a particular Cresnet run, the wire gauge and the Cresnet power usage of each network unit to be connected must be taken into consideration. Use Crestron Certified Wire only. If Cresnet units are to be daisy chained on the run, the Cresnet power usage of each network unit to be daisy chained must be added together to determine the Cresnet power usage of the entire chain. If the unit is run from a Crestron system power supply network port, the Cresnet power usage of that unit is the Cresnet power usage of the entire run. The wire gauge and the Cresnet power usage of the run should be used in the following equation to calculate the cable length value on the equation's left side.

Cable Length Equation

$$L < \frac{40,000}{R \times P}$$

Where: L = Length of run (or chain) in feet
R = 6 Ohms (Crestron Certified Wire: 18 AWG (0.75 mm²))
or 1.6 Ohms (Cresnet HP: 12 AWG (4 mm²))
P = Cresnet power usage of entire run (or chain)

Make sure the cable length value is less than the value calculated on the right side of the equation. For example, a Cresnet run using 18 AWG Crestron Certified Wire and drawing 20 watts should not have a length of run more than 333 feet (101 meters). If Cresnet HP is used for the same run, its length could extend to 1250 feet (381 meters).

NOTE: All Crestron certified Cresnet wiring must consist of two twisted pairs. One twisted pair is the +24V conductor and the GND conductor and the other twisted pair is the Y conductor and the Z conductor.

Strip and Tin Wire

When daisy chaining Cresnet units, strip the ends of the wires carefully to avoid nicking the conductors. Twist together the ends of the wires that share a pin on the network connector and tin the twisted connection. Apply solder only to the ends of the twisted wires. Avoid tinning too far up the wires or the end becomes brittle. Insert the tinned connection into the Cresnet connector and tighten the retaining screw. Repeat the procedure for the other three conductors.

Add Hubs

Use of a Cresnet Hub/Repeater (CNXHUB) is advised whenever the number of Cresnet devices on a network exceeds 20 or when the combined total length of Cresnet cable exceeds 3000 feet (914 meters).

Further Inquiries

To locate specific information or resolve questions after reviewing this guide, contact Crestron's True Blue Support at 1-888-CRESTRON [1-888-273-7876] or refer to the listing of Crestron worldwide offices on the Crestron Web site (www.crestron.com/offices) for assistance within a particular geographic region.

To post a question about Crestron products, log onto the Online Help section of the Crestron Web site (www.crestron.com/onlinehelp). First-time users must establish a user account to fully benefit from all available features.

Future Updates

As Crestron improves functions, adds new features and extends the capabilities of the CLS-C6 and CLS-C6M, additional information may be made available as manual updates. These updates are solely electronic and serve as intermediary supplements prior to the release of a complete technical documentation revision.

Check the Crestron Web site periodically for manual update availability and its relevance. Updates are identified as an "Addendum" in the Download column.

Return and Warranty Policies

Merchandise Returns / Repair Service

1. No merchandise may be returned for credit, exchange or service without prior authorization from Crestron. To obtain warranty service for Crestron products, contact an authorized Crestron dealer. Only authorized Crestron dealers may contact the factory and request an RMA (Return Merchandise Authorization) number. Enclose a note specifying the nature of the problem, name and phone number of contact person, RMA number and return address.
2. Products may be returned for credit, exchange or service with a Crestron Return Merchandise Authorization (RMA) number. Authorized returns must be shipped freight prepaid to Crestron, 6 Volvo Drive, Rockleigh, N.J. or its authorized subsidiaries, with RMA number clearly marked on the outside of all cartons. Shipments arriving freight collect or without an RMA number shall be subject to refusal. Crestron reserves the right in its sole and absolute discretion to charge a 15% restocking fee plus shipping costs on any products returned with an RMA.
3. Return freight charges following repair of items under warranty shall be paid by Crestron, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser.

Crestron Limited Warranty

Crestron Electronics, Inc. warrants its products to be free from manufacturing defects in materials and workmanship under normal use for a period of three (3) years from the date of purchase from Crestron, with the following exceptions: disk drives and any other moving or rotating mechanical parts, pan/tilt heads and power supplies are covered for a period of one (1) year; touch screen display and overlay components are covered for 90 days; batteries and incandescent lamps are not covered.

This warranty extends to products purchased directly from Crestron or an authorized Crestron dealer. Purchasers should inquire of the dealer regarding the nature and extent of the dealer's warranty, if any.

Crestron shall not be liable to honor the terms of this warranty if the product has been used in any application other than that for which it was intended or if it has been subjected to misuse, accidental damage, modification or improper installation procedures. Furthermore, this warranty does not cover any product that has had the serial number altered, defaced or removed.

This warranty shall be the sole and exclusive remedy to the original purchaser. In no event shall Crestron be liable for incidental or consequential damages of any kind (property or economic damages inclusive) arising from the sale or use of this equipment. Crestron is not liable for any claim made by a third party or made by the purchaser for a third party.

Crestron shall, at its option, repair or replace any product found defective, without charge for parts or labor. Repaired or replaced equipment and parts supplied under this warranty shall be covered only by the unexpired portion of the warranty.

Except as expressly set forth in this warranty, Crestron makes no other warranties, expressed or implied, nor authorizes any other party to offer any warranty, including any implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty. This warranty statement supersedes all previous warranties.

The specific patents that cover Crestron products are listed at patents.crestron.com.

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